

**AMENDMENTS TO THE CLAIMS (CURRENT STATUS OF ALL CLAIMS):**

Claims 1 - 20. (cancelled)

**5 Claim 21. (new)**

A sheet product roll dispenser, comprising:

a) an openable cabinet for holding a roll of spirally-wound sheet product, the spirally-wound sheet product having a free end;

10 the free end being releasably held in a nip between an advance roller and a pinch roller;

the advance roller being turned by an advance motor connected rotationally to the advance roller;

15 the advance motor being started and stopped by the blocking of a first electromagnetic beam by a user, so that the sheet product advances when the beam is blocked and stops when the beam is allowed to pass;

b) means for cutting the sheet product transversely to the direction of advancement;

the means for cutting the sheet product transversely comprising a cutter assembly driven transversely by a cut motor;

20 the cut motor being controlled by the blocking of a second electromagnetic beam by a user;

the cutter assembly further comprising a vertical cutter axle mounted between bearings in a housing, and a circular blade having a circular cutting edge mounted fixedly to the axle in concentric and perpendicular relation to the axle;

25 the cutter assembly slidably held by a traverse rod mounted on a first side of the sheet product transverse to the direction of advancement;

the traverse rod having opposite ends, and having at least one park position located at either or both opposite ends;

the means for cutting the sheet product transversely to the direction of advancement further comprising a fixed blade having a straight cutting edge mounted on a second side of the sheet product and transverse to the direction of advancement;

the traverse rod being mounted so as to bring the circular cutting edge into shearing engagement with the straight cutting edge along the entire length of the fixed blade, and so as to cut the sheet product fully transversely in one pass; and

c) means for releasably clamping the sheet product above and below the straight cutting edge.

Claim 22. (new)

The dispenser of claim 21 , wherein:

said cutter assembly further comprises an upper drive roller fixedly attached to said cutter axle above and parallel to said circular blade, and a lower drive roller fixedly attached to said cutter axle below and parallel to said circular blade; and said means for releasably clamping the sheet product above and below the straight cutting edge further comprises an upper clamping plate disposed parallel to said straight cutting edge on said first side of said sheet product;

the upper clamping plate being suspended pivotably from its upper edge so that it is spaced away from said sheet product when said cutter assembly is in said at least one park position and pressed against said sheet product by the upper drive roller when said cutter assembly is out of said at least one park position; and said means for releasably clamping the sheet product above and below the straight cutting edge further comprises a front lower clamping plate disposed

parallel to, and below, the upper clamping plate, and a rear lower clamping plate disposed parallel to, and below, said straight cutting edge;

the lower front and lower rear clamping plates being suspended pivotably from their lower edges so that they are spaced apart from said sheet product when said cutter assembly is in said at least one park position and the lower front clamping plate is pressed against said sheet product and said sheet product is in turn pressed against the lower rear clamping plate by the lower drive roller when said cutter assembly is out of said at least one park position.

10 Claim 23. (new)

The dispenser of claim 22, wherein:

said means for actuating the advance motor further comprises means for preventing motion of said cutting assembly while said means for actuating the advance motor is actuated; and

15 said means for preventing motion of said cutting assembly while said means for actuating the advance motor is actuated further comprises means for preventing actuation of said means for controlling the advance motor when said cutting assembly is out of said at least one park position.

20 Claim 24. (new)

The dispenser of claim 23, wherein:

said means for controlling the cut motor further comprises means for a) starting motion of said cutter assembly away from said at least one park position when said second beam is blocked and b) maintaining motion of said cutter assembly from said at least one park position through a designated cycle regardless of whether said second beam continues to be blocked.

**Claim 25. (new)**

The dispenser of claim 24, wherein:

said cycle comprises:

- a) maintaining motion of said cut motor until said cutter assembly reaches a position on said traverse rod opposite to that of said at least one park position, whereupon
- b) said cutter assembly trips a means for reversing the motion of said cutter assembly, and
- c) said cutter assembly moves back to a median position along said rod, then stops.

**Claim 26. (new)**

The dispenser of claim 25, wherein:

said means for controlling the cut motor further comprises means for restarting the cut motor from said median position toward said at least one park position when said sheet product is withdrawn from between said lower front clamping plate and said lower rear clamping plate.

**Claim 27. (new)**

The dispenser of claim 26, wherein:

said means for restarting the cut motor further comprises a first electrical relay which responds to said lower front clamping plate coming into electrical contact with said lower rear clamping plate.

**Claim 28. (new)**

The dispenser of claim 27, wherein:

said openable cabinet further comprises:

means for returning said cutter assembly to said at least one park position when opening of said openable cabinet commences; and  
means for disconnecting all electric power from the dispenser when the openable cabinet is fully opened.

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**Claim 29. (new)**

The dispenser of claim 28, further comprising:

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means for lifting said pinch roller away from said advance roller while maintaining the axes of said pinch roller and said advance roller in substantially parallel relation, thereby forming a clear path between said advance roller and said pinch roller for feeding a sheet product therethrough by hand.

**Claim 30. (new)**

The dispenser of claim 29, wherein:

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said means for actuating said advance motor further comprises:

a first electronic amplifier for amplifying a first signal from a first sensor of said first electromagnetic beam, the first signal being present only when said first electromagnetic beam is blocked;

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an advance motor relay that is turned on by the amplified signal from the first electronic amplifier, causing electric power to flow through said advance motor, and turned off when the first signal is not present;

an advance motor brake relay that brakes said advance motor dynamically by grounding said advance motor when the advance motor relay is de-energized; and electrical connections between the advance motor brake relay and said means for controlling said cut motor that prevent said means for actuating said cut motor from being actuated while said means for actuating said advance motor is actuated.

**Claim 31. (new)**

The dispenser of claim 30, wherein:

said means for actuating said cut motor further comprises:

5 a second electronic amplifier for amplifying a second signal from a second sensor of said second electromagnetic beam, the second signal being initiated only when said second electromagnetic beam is blocked;

a right hand switch mounted at said at least one park position of said cutter assembly, a center switch mounted at said median position along said traverse rod, and a left hand switch mounted at the leftmost point of travel along said traverse rod, and a means for tripping switches mounted on said cutter assembly;

10 a cut motor relay that is turned on by the amplified signal from the second electronic amplifier, causing said cutter assembly to move leftward from said at least one park position, and maintained on until said means for tripping switches trips the left hand switch;

15 a cut motor brake relay that brakes said cut motor dynamically by grounding said cut motor when the cut motor relay is de-energized, then reverses current through said cut motor until said means for tripping switches trips either a) the center switch or b) the right hand switch.

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**Claim 32. (new)**

The dispenser of claim 31, wherein:

said lower rear clamping plate and said lower front clamping plate are wired electronically to comprise a clamp switch that is in the open position when either

25 a) said sheet product is held between them, or b) said cutter assembly is in said at least one park position; and

the clamp switch uses a low voltage source to energize a clamp plate relay, which is connected to re-energize said cut motor relay.

**Claim 33. (new)**

5       The dispenser of claim 32, wherein:

said traverse rod is mounted within said openable cabinet on two springs, one at either end of said traverse rod and biasing said traverse rod in a horizontal direction towards said lower rear clamping plate, so as to press said upper and lower drive rollers with substantially constant force at all points along said traverse  
10       rod.

**Claim 34. (new)**

The dispenser of claim 33, wherein:

said circular blade has a first diameter, said upper drive roller has a second  
15       diameter, and said lower drive roller has a third diameter; and  
the second and third diameters are less than the first diameter.

**Claim 35. (new)**

The dispenser of claim 34, wherein:

20       the edge of said fixed blade is at least 4 Rockwell C units harder than the edge of said circular blade.

**Claim 36. (new)**

The dispenser of claim 35, wherein:

25       said lower front clamping plate and said lower rear clamping plate further comprise cutout portions for the release of accumulated dust.

**Claim 37. (new)**



The dispenser of claim 34, wherein:

said openable cabinet further comprises:

a rectangular box divided substantially in half by an horizontal divider, forming an upper portion and a lower portion, the box also having a right side and a left side;

5 the front of the upper space being openably covered by a door;

the door having affixed to it on either of its sides downwardly-extending arms, the arms wrapping around the outsides of the lower portion along the right and left sides, each arm having a proximal end affixed to the door and a distal end;

10 the door being pivotably fixed to each side by a pin near the proximal end of each arm, so that the door may open downwardly from the front of the upper space to a substantially horizontal plane, the distal ends of the arms rising to a substantially horizontal plane;

said means for lifting said pinch roller away from said advance roller while maintaining the axes of said pinch roller and said advance roller in parallel relation comprising right and left L-shaped tabs affixed to the distal ends of the arms;

15 said pinch roller axle having a right end and a left end, each end protruding through elongate slots in the right and left sides, respectively, of the box; and said right and left L-shaped tabs engaging and lifting the right and left ends of said pinch roller axle within the slots when said door is opened downwardly to a

20 substantially horizontal plane.

**Claim 38. (new)**

The dispenser of claim 34, wherein:

said openable cabinet further comprises:

25 a rectangular housing into which slidably fits a rectangular drawer;

the drawer bounded on its sides by right and left panels;



said pinch roller axle having a right and a left end, the ends protruding through elongate right and left slots in the panels, respectively;

said means for lifting said pinch roller away from said advance roller while maintaining the axes of said pinch roller and said advance roller in substantially parallel relation comprising right and left crank plates being pivotably affixed to the respective panels, the crank plates having right and left L-shaped tabs, right and left tangs, and right and left springs affixed thereto, the springs biasing the crank plates rotationally so as to cause the tabs to engage the right and left ends of said pinch roller axle and lift them when the drawer is outside the housing; and the housing having right and left inner catches that engage the right and left tangs, respectively, on the crank plates when the drawer is inserted fully into the housing, the tangs rotating the crank plates against the spring bias and lowering said pinch roller.

15 Claim 39. (new)

The dispenser of claim 37, wherein:

said means for returning said cutter assembly to said at least one park position when opening of said openable cabinet commences comprises a first switch that is held closed by one of said distal ends when said door is closed, and opens when opening of said door commences, actuating said means for restarting the cut motor; and

said means for disconnecting all electric power comprises a second switch that is open when said means for lifting said pinch roller is disengaged from said axle, and closed by said axle when said axle is raised by said L-shaped tabs when said door is opened.

Claim 40. (new)

The dispenser of claim 38, wherein:

said means for returning said cutter assembly to said at least one park position  
comprises a third switch that is open until said axle is raised by said L-shaped tabs  
when said drawer is pulled out of said housing, closing the third switch and  
5 actuating said means for restarting the cut motor; and

said means for disconnecting all electric power comprises a contact strip mounted  
on said drawer that maintains electrical contact with a power source in said  
housing when said drawer is within said housing, and ceases electrical contact  
when said drawer is withdrawn from said housing.

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